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ENTERIC, CARDIOPULMONARY AND MIXED FORMS OF CANINE PARVOVIROSIS. HISTOPATHOLOGICAL STUDY AND ANALYTICAL DETERMINATIONS

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The relationship between canine parvovirus (CPV-2) and the gastroenteric syndrome in dogs seems quite clear (Fernández et al., 1987). Cases of myocarditis caused by parvovirus have also been widely reported (Dotta and Guarda, 1980). Little information is available, however, concerning the mixed form of parvovirosis (Cammarata et al., 1981). The present study aims to provide further information on this third type of canine parvovirosis.

Material and methods

57 dogs (Dobermann, Cocker spaniel and Alsatian) ranging in age from 40 to 120 days were used for this study. A rapid diagnosis of virosis was made using electron microscopy for faecal analysis by the negative staining technique described by Fernandez et al. (1989). Once the diagnosis was confirmed, blood and urine samples were taken for analysis within 24 hours ante mortem.

Results

Physiopathological findings

	Control	Enteric	Myocardial	Mixed
Hemochromometric analysis				
Erythro. (10^6 mm)	7±0.4	4.5±0.3	6.3±0.3	5±0.4
Leuko. (10^3 mm)	11±0.5	3.3±0.5	5.3±0.5	4.2±0.4
Platelet (10^3 mm)	340±8.9	290±6.1	313±10	299±8
Hematocrit (%)	40.2±1.4	30.1±3.4	36.2±3.4	32.5±3.6
Hemogl. (g/dl)	15±2.2	9.8±1.2	12±0.8	11±1.1
Liver function tests				
Ttl.bil. (mg/dl)	0.40±0.09	0.65±0.04	0.46±0.05	0.54±0.07
Dir.Bil. (mg/dl)	0.12±0.02	0.22±0.08	0.14±0.03	0.18±0.02
GOT (IU)	30±2558.4	88±6.5	40±2.2	69±4.3
GPT (IU)	32±6.3	72±5.7	38±4.2	61±5.9
Alk.Phosph. (UI)	98±11.2	145±13.6	109±8.9	125±10.2
Arginase (UI)	0.03±0.01	0.2±0.04	0.09±0.03	0.15±0.03
Ttl.prot. (g/dl)	6.1±0.3	4.5±0.5	5.4±0.3	5.1±0.2
Kidney function tests				
pH	6.6±0.2	5.1±0.3	6±0.2	5.6±0.3
Density	1.035±0.4	1.051±0.2	1.038±0.2	1.046±0.2
Non-pr.nit. (g/l)	25±5	40±3.4	28±4.3	34±3.5
Nitro.urea (g/l)	16±4	30±4.2	19±3.1	26±2.5

Histopathological findings:

	Enteric	Myocardial	Mixed
Digestive System	Hemorrhagic gastroenteritis	Hyperemia in submucosa	Catarrhal gastroenteritis
Liver	Parenchymatous hepatitis	Centrolobular stasis	Stasis Apoptosis
Kidney	Serous G-nephritis Tubular necrosis		Tubulonephrosis
Mesenteric Lymph nod.	Lymphocytolysis in Germ. centres		Lymphocytolysis
Spleen		Hyperplastic Splenitis	Follicular Hyperplasia
Myocardium	Cell necrosis	Non-purulent	Non-purulent
	Interfasc.edema	myocarditis Intranuclear inclusions	myocarditis + Intense fibre destruction
Respirat. System		Acute Alveolar Edema	

Discussion

The specific histopathology of the enteric form (necrotic-hemorrhagic gastroenteritis), the myocardial form (non-purulent myocarditis with intranuclear inclusion corpuscles) and the mixed form (catarrhal enteritis and non-purulent myocarditis) in correlation with blood and urine tests allows three different clinical and pathological forms to be defined within canine parvovirosis.

References

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PATHOLOGY OF FIV-INFECTION

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The number of publications on FIV-infection in cats is already high although the virus is known only for 3 years. Detailed pathological and histological studies of alterations in FIV-infected animals, however, have only been published as case reports of very few cats and such an investigation in an at least somewhat more relevant number has not been published yet. Most papers which mention pathological and histological alterations do not give an estimation of the frequency of lesions and therefore give no clue which alterations might be interpreted as a hint for FIV-infection of cats at necropsy. The interpretation of findings in FIV-positive cats is furthermore complicated by the fact that due to the long asymptomatic carrier period